OPERATING SUMMARY

1973

HUNTSVILLE

WATER POLLUTION CONTROL PLANT

Ontario

MINISTRY OF THE ENVIRONMENT

MINISTER
Honourable William G. Newman

DEPUTY MINISTER
E. Biggs

ASSISTANT DEPUTY MINISTER
REGIONAL OPERATIONS
J. Barr

REGIONAL OPERATIONS DIVISION

DIRECTOR, CENTRAL REGION
P. Cockburn

MANAGER, UTILITY OPERATIONS
A. Thomas

HUNTSVILLE

WATER POLLUTION CONTROL PLANT

operated for

THE TOWN OF HUNTSVILLE

by the

MINISTRY OF THE ENVIRONMENT

1973 ANNUAL OPERATING SUMMARY

prepared by
Plant Performance Unit
TECHNICAL SERVICES BRANCH
T. Cross, Director

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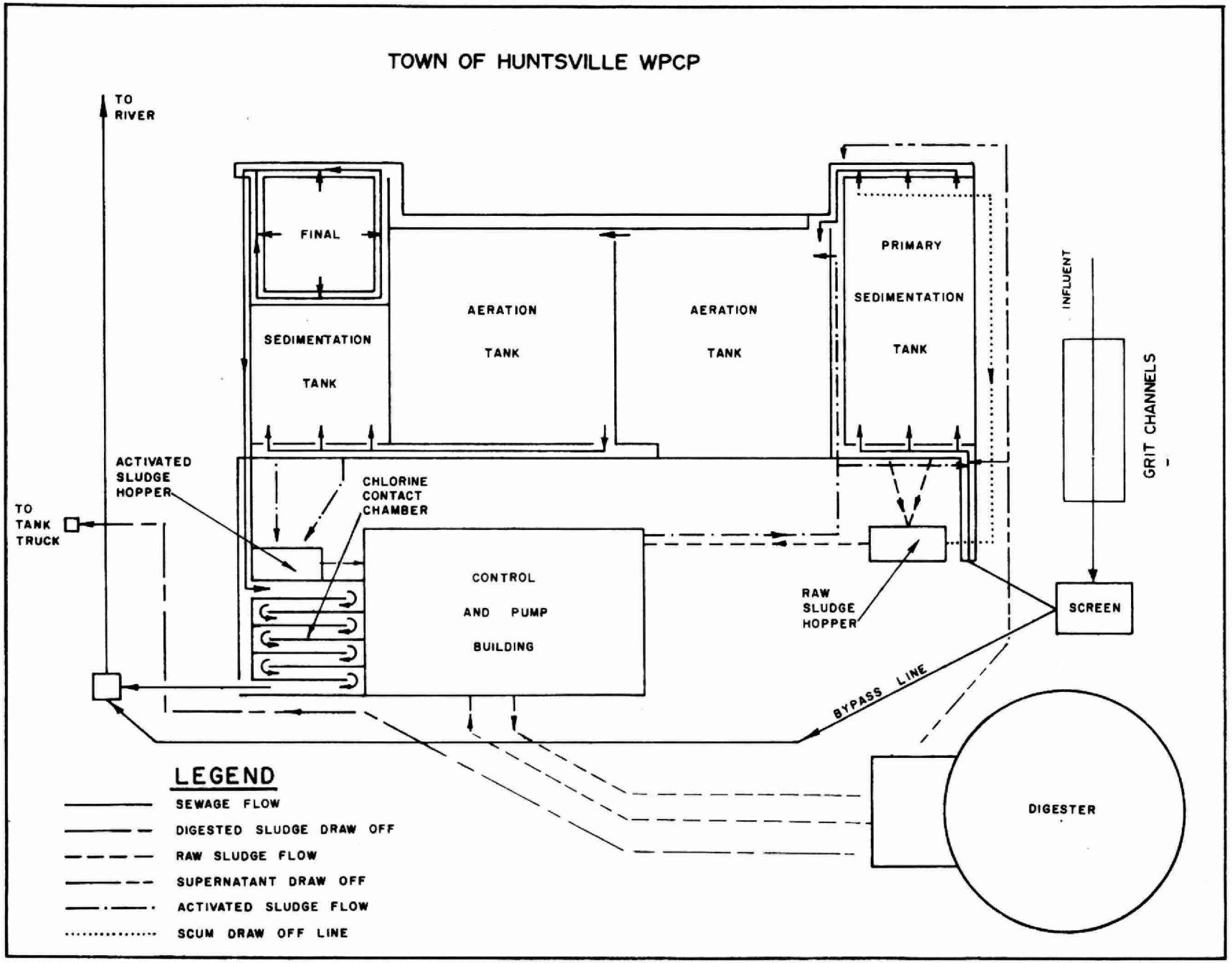

TOWN OF HUNTSVILLE WPCP
TO RIVER
FINAL
SEDIMENTATION TANK
AERATION TANK
AERATION TANK
PRIMARY SEDIMENTATION TANK
INFLUENT
GRIT CHANNELS
ACTIVATED SLUDGE HOPPER
CHLORINE CONTACT CHAMBER
TO TANK TRUCK
CONTROL AND PUMP BUILDING
RAW SLUDGE HOPPER
SCREEN
BYPASS LINE
DIGESTER
LEGEND
SEWAGE FLOW
DIGESTED SLUDGE DRAW OFF
RAW SLUDGE FLOW
SUPERNATANT DRAW OFF
ACTIVATED SLUDGE FLOW
SCUM DRAW OFF LINE

DESIGN DATA

PROJECT Town of Huntsville WPCP

PROJECT NO. 2-0015-58

TREATMENT Activated Sludge

DESIGN FLOW 0.25 mgd

DESIGN POPULATION 3,000

BOD - Raw Sewage 250 mg/l
- Removal 90-95%

SS - Raw Sewage 250 mg/l
- Removal 90-95%

PRIMARY TREATMENT

Grit Removal

Type: Manually cleaned channels
Size: Two 10' x 1'7" x 3'4"
(2 x 52½ cu ft)
Velocity: 0.99 fps

Screening

Type: Manually cleaned bar screen

Primary Sedimentation

Type: United Steel Corp.
Size: One 30' x 10' x 8' (15,000 gal)
Retention: 1.5 hr
Loading: Surface, 833 gal/ft^2/day
Weir, 25,000 gal/ft/day

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical aeration
Size: Two 24' x 24' x 12' (87,500 gal)
Retention: 8.4 hr

Aerators: Chicago Pump (2)

Secondary Sedimentation

Type: United Steel Corp.
Size: One 30' x 13' x 12' (29,300 gal)
Retention: 2.8 hr
Loading: Surface, 640 gal/ft^2/day
1 Weir, 5,300 gal/ft/day

CHLORINATION

Type: W & T
Size: One 20 lb/day

Chlorine Contact Chamber

Size: One 12' x 11½' x 10' swd
(6,250 gal)
Retention: 36 min

OUTFALL

- 105' of 15" corrugated pipe to Muskoka River

SLUDGE HANDLING

Digestion System - Single-stage

Type: Mixed by recirculation, Fairbanks-Morse, 100 gpm @ 40' tdh
Size: One 30' dia x 20' swd (15,000 cu ft or 93,500 gal)
Loading: 1.2 lb/cu ft/mo

PUMPING STATIONS

Pumping Station #1

Type: Chicago Pump
Size: Two 290 gpm

Pumping Station #2

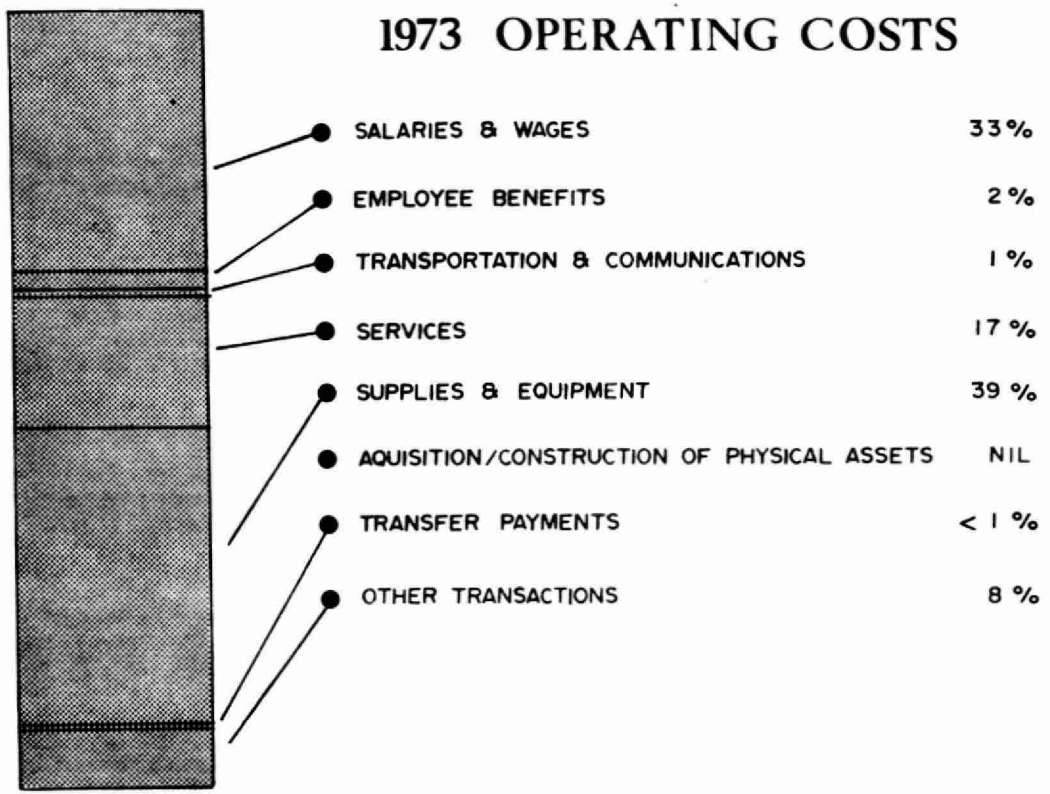
Type: Chicago Pump
Size: Two 80 gpm

Pumping Station #3

Type: Chicago Pump
Size: One 80 gpm

ANNUAL COSTS

1973 OPERATING COSTS



YEARLY OPERATING COSTS

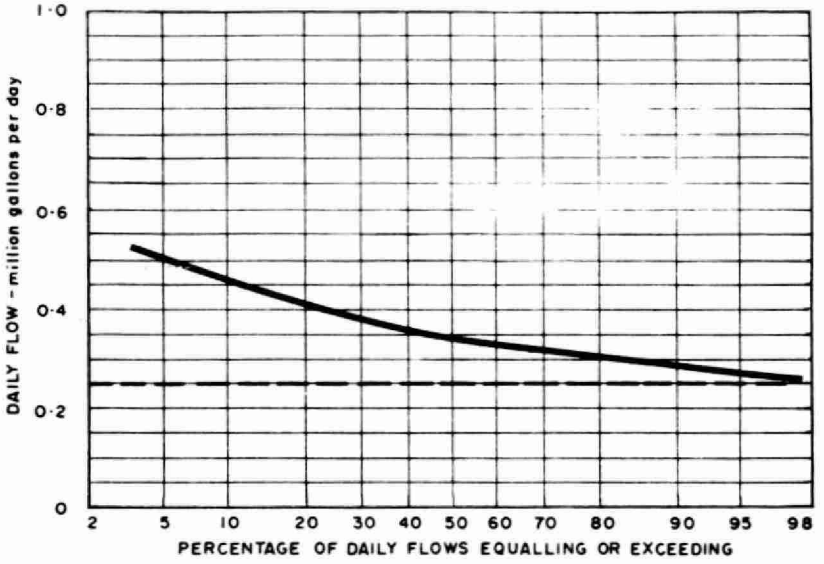
YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS $/M.G.	UNIT COSTS ¢/lb BOD
1968	97	$ 13,293	137	10
1969	104	14.146	136	10
1970	123	19,268	156	12
1971	135	19,262	142	12
1972	130	33,456	257	23
1973	141	32,128	228	21

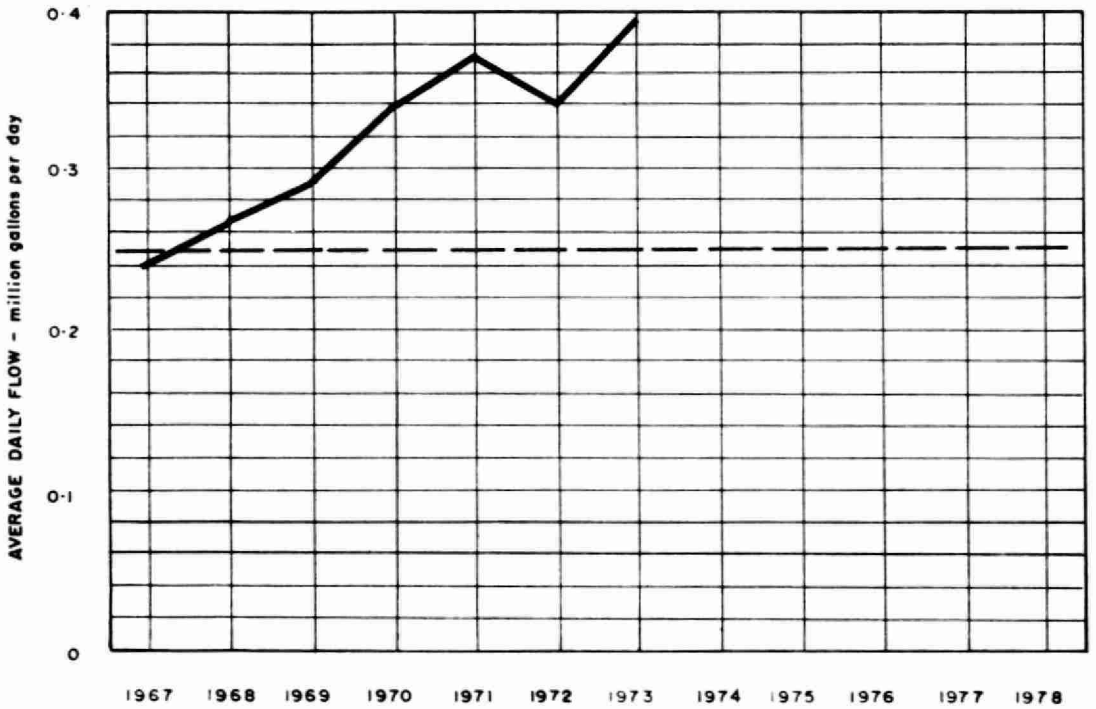
OPERATING EXPENDITURES

SALARIES AND WAGES	$10,662
EMPLOYEE BENEFITS	615
TRANSPORTATION & COMMUNICATIONS	204
SERVICES	5,540
SUPPLIES AND EQUIPMENT	12,583
ACQUISITION/CONSTRUCTION OF PHYSICAL ASSETS	0
TRANSFER PAYMENTS	37
OTHER TRANSACTIONS	2,487
TOTAL	$32,128

PROCESS DATA

FLOWS



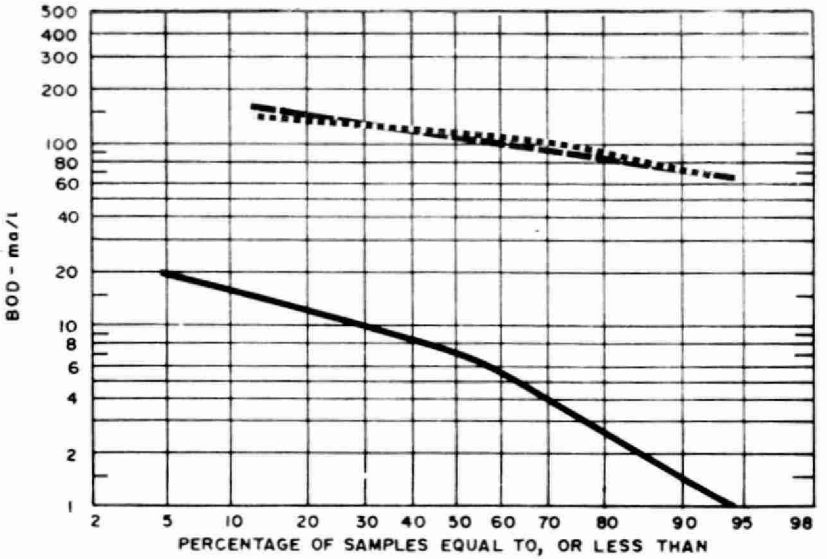


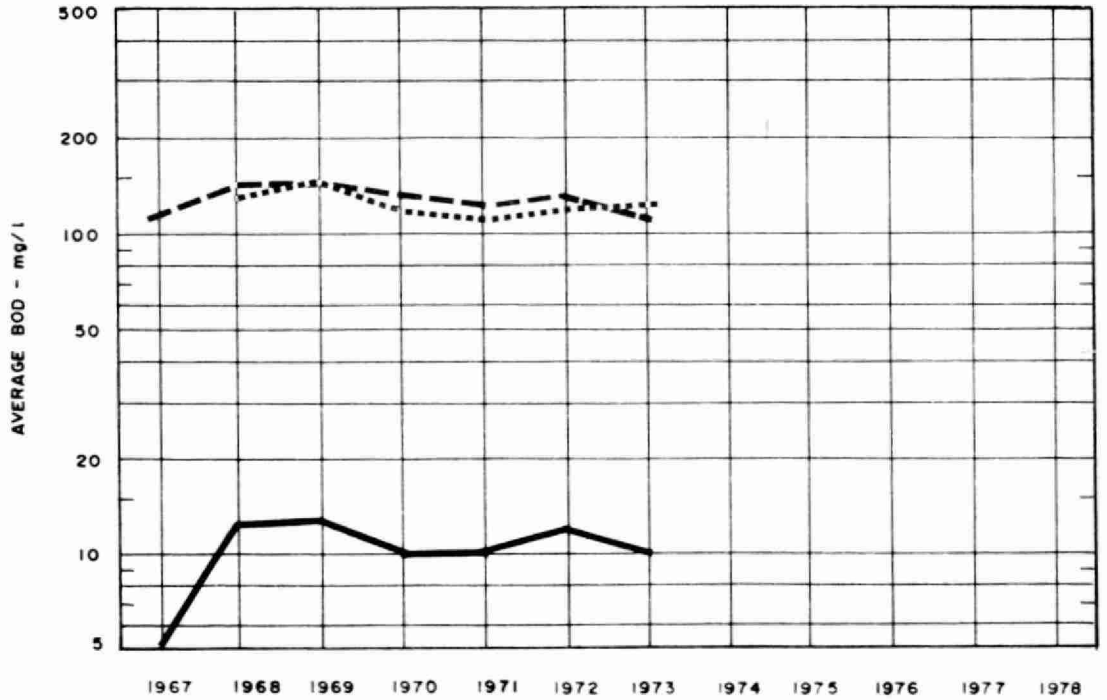
DESIGN CAPACITY _ _ _ _ _ _ _

PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10^3 pounds	mg/l	mg/l	%	10^3 pounds	mg/l P	mg/l P
JAN	12.3	0.40	0.54	100	7	93	11	100	10	90	11	5.5	0.4
FEB	9.3	0.33	0.52	140	10	93	12	140	23	84	11	6.8	0.9
MAR	13.9	0.45	0.60	75	20	73	8	100	50	51	7	4.5	1.7
APR	11.3	0.38	0.52	100	7	93	10	120	15	88	12	6.7	1.6
MAY	10.6	0.34	0.42	110	4	96	11	120	8	93	11	6.4	0.3
JUNE	14.4	0.38	0.53	95	7	93	13	90	10	89	12	8.5	0.3
JULY	10.6	0.34	0.49	120	4	97	12	170	10	94	17	7.4	0.2
AUG	14.2	0.46	0.47					40	20	50	3	6.0	0.4
SEPT	10.4	0.35	0.38	150	5	97	15	70	10	86	6	6.1	0.6
OCT	10.9	0.35	0.52	170	7	96	19	110	20	82	10	5.7	0.5
NOV	11.4	0.39	0.55	140	10	93	15	90	20	78	8	5.8	0.5
DEC	11.7	0.38	0.49	60	1	98	7	80	15	81	8	5.6	0.3
TOTAL	141.0	-	-	-	-	-		-	-	-	115	-	-
AVG.		0.39	MAXIMUM 0.60	110	10	91	13	100	19	83	10	6.2	0.5
No. of Samples	-	-	-	15	15	-	-	16	16	-	-	16	16

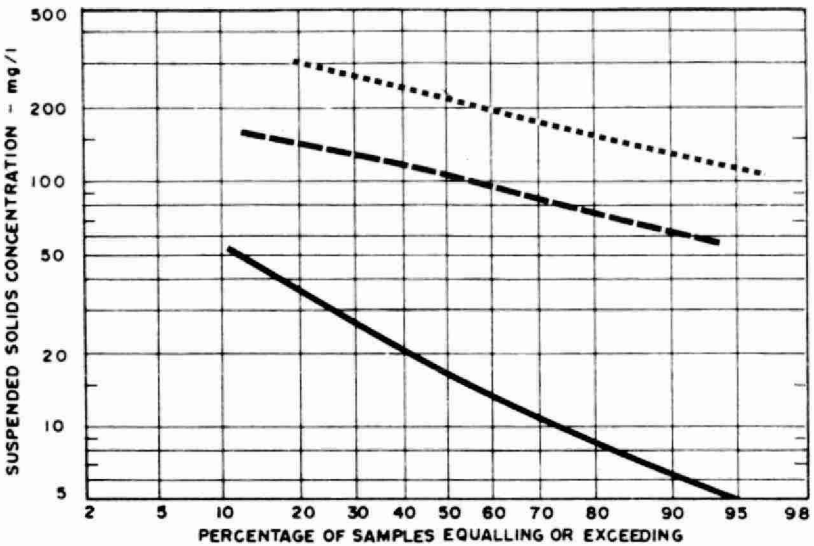
BIOCHEMICAL OXYGEN DEMAND

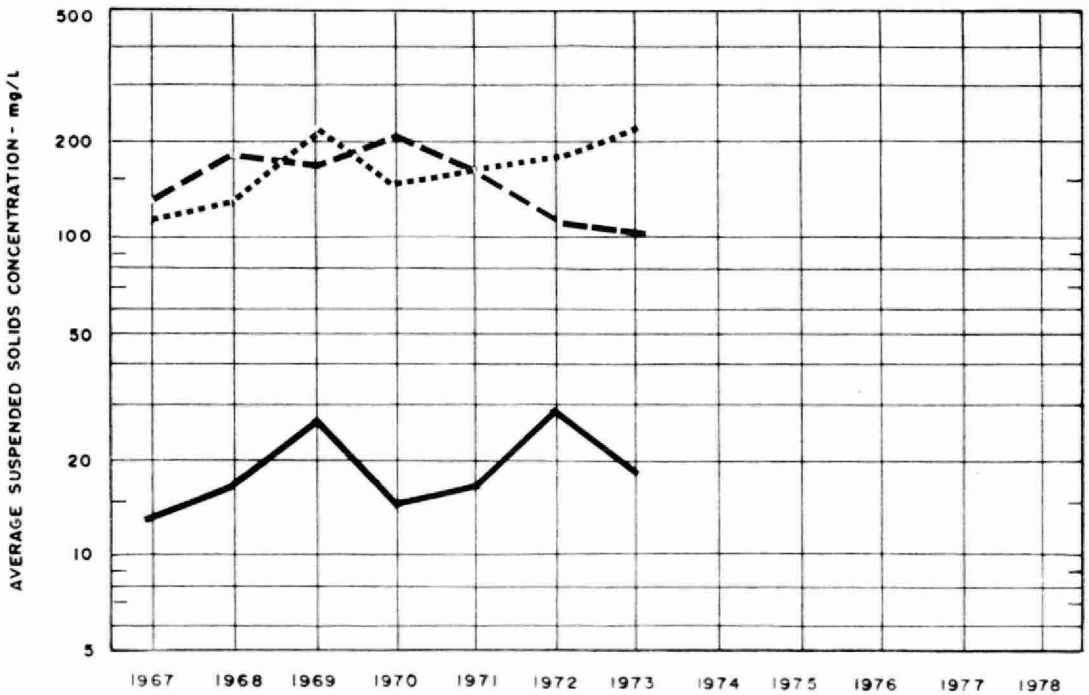




PLANT INFLUENT
PRIMARY EFFLUENT
PLANT EFFLUENT

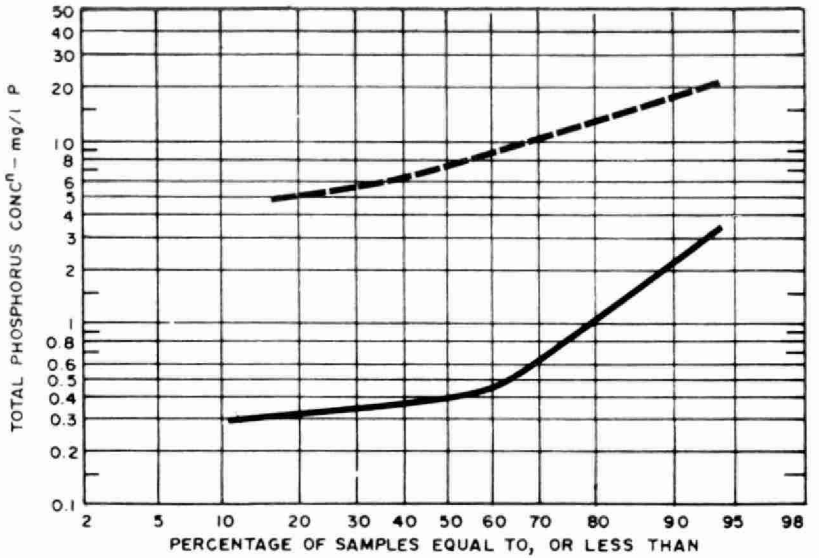
SUSPENDED SOLIDS

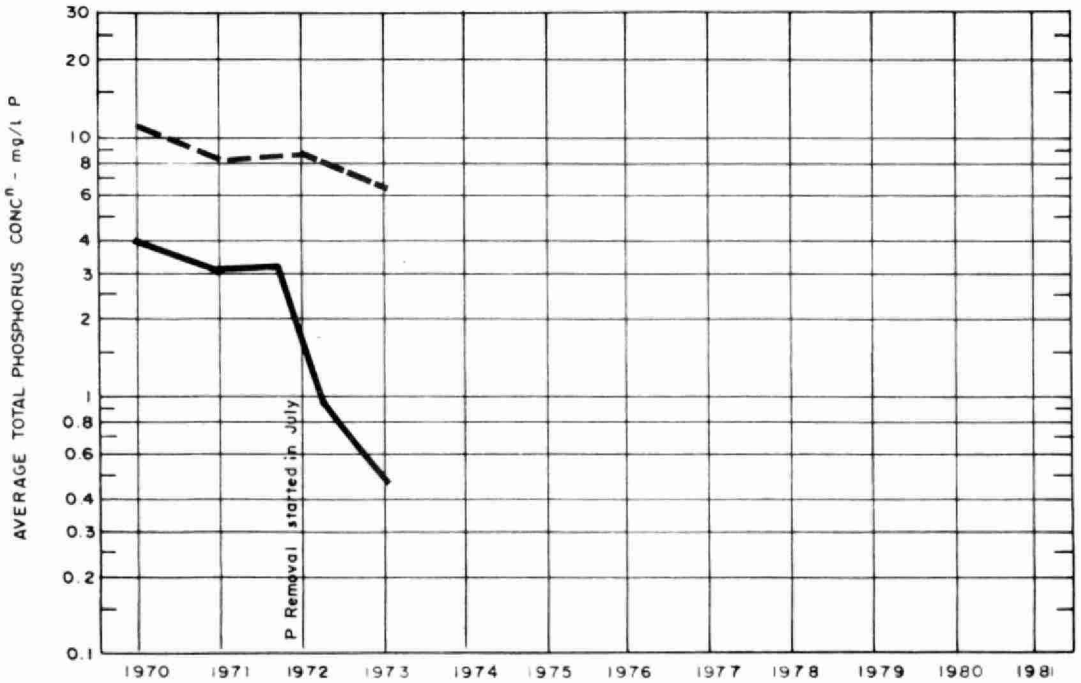




PLANT INFLUENT
PRIMARY EFFLUENT
PLANT EFFLUENT

PHOSPHORUS

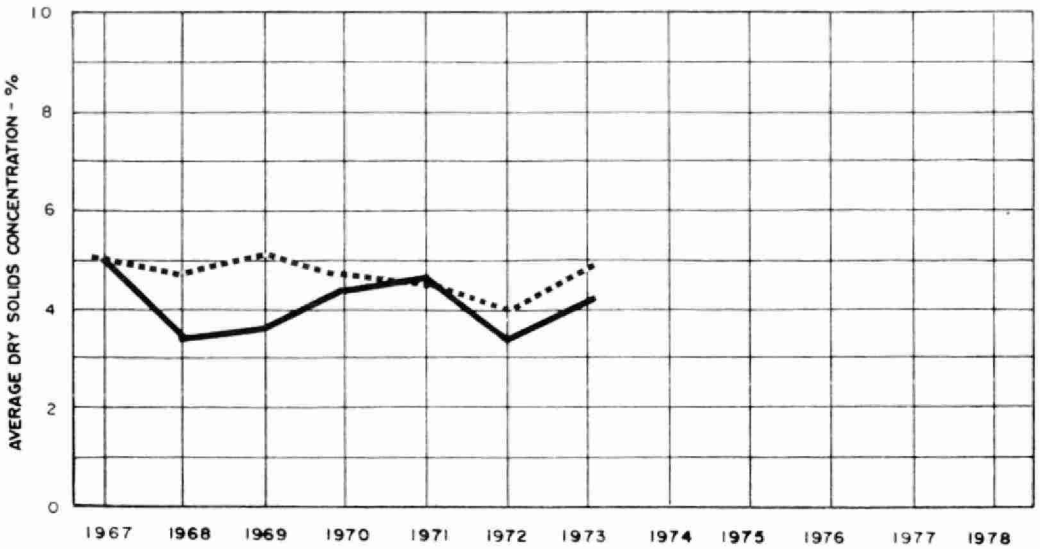




PLANT INFLUENT

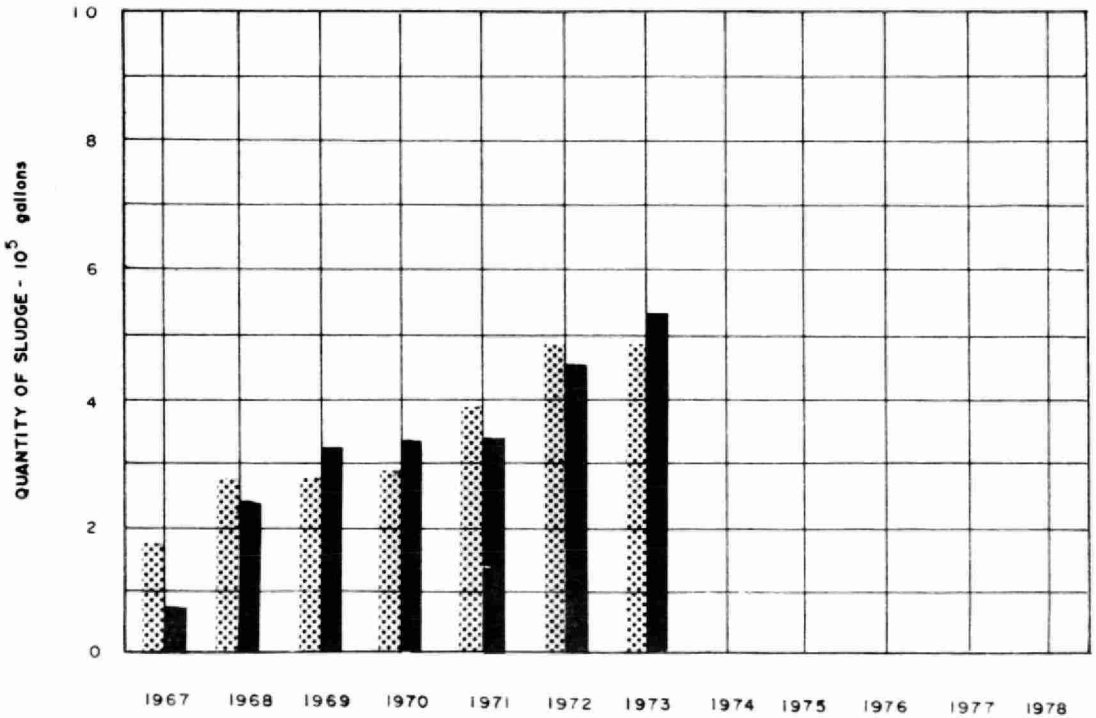
PLANT EFFLUENT

DIGESTION



RAW SLUDGE .....

DIGESTED SLUDGE ——



TREATMENT DATA

MONTH	GRIT	CHLORINATION		PRIMARY EFFLUENT		AERATION			SLUDGE DIGESTION and DISPOSAL							
									RAW SLUDGE			DIGESTED SLUDGE			SUPER-NATANT T. S.	AMOUNT HAULED
	QUANTITY REMOVED cubic feet	Cl_2 USED pounds	AVG. DOSE mg/l	BOD mg/l	SUSPENDED SOLIDS mg/l	MLSS CONC mg/l	F/M day^{-1}	AIR $\frac{1000\ ft^3}{lb\ BOD}$	QUANTITY 10^3 gallons	TOTAL SOLIDS %	VOL. SOLIDS %	QUANTITY 10^3 gallons	TOTAL SOLIDS %	VOL. SOLIDS %	%	cubic yards
JAN	27	450	3.6	95	210	6400	0.07		41	5.3	60	45	4.5	52	0.02	271
FEB	26	380	4.1	150	220	1900	0.23		53	4.1	56	53	4.7	46	0.2	316
MAR	43	480	3.4	95	250	2300	0.22		29	6.3	45	42	4.2	67	0.2	249
APR	15	340	3.0	120	220	3070	0.16		26	4.8	55	20	5.6	46	0.2	120
MAY	18	360	3.4	110	250	2000	0.21		41	5.2	55	47	3.8	68	0.3	277
JUNE	117	410	2.8	100	230	1600	0.26		34	4.7	22	49	5.7	33		293
JULY	87	520	5.0	160	250	1700	0.56		25	3.7	51	29	2.6	40	0.3	174
AUG	30	610	4.3		270	1500			41			47			0.3	279
SEPT	20	500	4.8	85	130	1600	0.21		58			50			1.7	300
OCT	23	550	5.0	120	200	1200	0.40		53			59			1.9	353
NOV	17	500	4.4	140	120	1500	0.42		44	4.7	62	57	2.6	48	1.6	338
DEC	13	490	4.2						40			30				180
TOTAL	436	5590	-	-	-	-	-	-	485	-	-	528	-	-	-	3150
AVG.	3.1 cu.ft/mil gal	470	4.0	120	210	2300	0.27		40	4.9	51	44	4.2	50	0.8	263